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Global market for laser and IPL technologies in aesthetic procedures. Regional analysis and forecasts through 2030

Globalny rynek technologii laserowych i IPL w zabiegach estetycznych. Analiza regionalna i prognozy do 2030 roku

ABSTRACT

Aesthetic procedures are undergoing a technological revolution, with lasers and intense pulsed light (IPL) technology at the heart of this transformation. These technologies offer an alternative to traditional, more invasive surgical methods.

This study aimed to conduct a comprehensive analysis of the global market for lasers and IPL technology used in aesthetic procedures, with a particular focus on regional segmentation and growth forecasts through 2030.

The study assessed market value across four major regions (North America, Europe, Asia-Pacific, and South America), identified the most frequently performed procedures, and analysed the technological and demographic trends driving market growth.

The methodology was based on data from reputable research institutions, including the US-based research and consulting firm GVR, the International Society of Aesthetic Plastic Surgery (ISAPS), and the global market analysis firm BMI. A Compound Annual Growth Rate (CAGR) method was applied, incorporating cross-validation of data from at least two independent sources. The analysis covered the 2018-2024 period, with forecasts extending to 2030.

The results indicate dynamic growth in the global market. The United States holds the dominant market position, followed by Europe. Laser hair removal and skin rejuvenation/resurfacing are among the most frequently performed procedures. Canada exhibits the highest growth rate, while the Asia-Pacific region demonstrates the greatest long-term growth potential.

Keywords: aesthetic lasers, IPL technology, laser hair removal, market analysis.

STRESZCZENIE

Zabiegi estetyczne przechodzą rewolucję technologiczną, a w centrum tej transformacji znajdują się lasery i technologia oparta na intensywnym świetle pulsacyjnym (IPL). Stanowią one alternatywę dla tradycyjnych, bardziej inwazyjnych metod chirurgicznych.

Celem pracy była kompleksowa analiza globalnego rynku laserów i technologii IPL wykorzystywanych do zabiegów estetycznych ze szczególnym uwzględnieniem segmentacji regionalnej i prognoz rozwoju do 2030 roku.

Zakres badania obejmował szczegółową ocenę wartości rynku w czterech głównych regionach: Ameryka Północna, Europa, Azja i Pacyfik oraz Ameryka Południowa, identyfikację najczęściej wykonywanych procedur, a także analizę trendów technologicznych i demograficznych determinujących ich rozwój.

Metodyka oparta została na analizie danych z renomowanych instytucji badawczych, w tym amerykańskiej firmy badawczo-doradczej GVR, Międzynarodowego Towarzystwa Estetycznej Chirurgii Plastycznej ISAPS oraz globalnej firmy BMI wykonującej analizy i raporty rynkowe. Zastosowano metodę złożonej rocznej stopy wzrostu z walidacją krzyżową danych z co najmniej dwóch niezależnych źródeł. Okres bazowy obejmował lata 2018-2024 z prognozą rozwoju do 2030 roku.

Wyniki wskazują na dynamiczny wzrost globalnego rynku. Dominującą pozycję na rynku zajmują Stany Zjednoczone, a drugie miejsce przypada Europie. Do najczęściej wykonywanych procedur należą epilacja laserowa oraz odmładzanie i przebudowa skóry (*resurfacing*). Najwyższą dynamikę wzrostu wykazuje Kanada, podczas gdy region Azji i Pacyfiku odznacza się największym długoterminowym potencjałem rozwojowym.

Słowa kluczowe: lasery estetyczne, technologia IPL, epilacja laserowa, analiza rynku.

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INTRODUCTION

Lasers used in aesthetic procedures emit monochromatic, focused, collimated beams of light at a specific wavelength. Common types include carbon dioxide, diode, thulium, erbium-glass, erbium-YAG, neodymium-YAG, and alexandrite lasers.

Intense pulsed light (IPL) technology differs from lasers. While lasers emit light at a single, precisely defined wavelength, IPL systems utilize a broad spectrum of light (typically 400-1,200 nm) with the ability to filter out unwanted wavelength ranges.

Both types of devices utilize the phenomenon of selective photothermolysis, in which light energy is selectively absorbed by target chromophores (such as melanin, hemoglobin, water, porphyrins, and pigments used in tattoos and permanent makeup). The absorbed energy is converted into heat, which causes controlled damage to or stimulation of the target structure (e.g., hair follicles, blood vessel walls, collagen fibers), without harming the surrounding tissues. Lasers and IPL devices are widely used worldwide for treatments such as hair reduction, photorejuvenation, removal of vascular and pigmented lesions, acne therapy, and scar reduction. Only lasers are used for tattoo and permanent makeup removal, as well as for laser skin resurfacing.

The value of the global aesthetic laser market (sales of devices and consumables) is estimated at 1.60 billion U.S. dollars (USD, $) in 2024 and is projected to grow at a compound annual growth rate (CAGR) of 16.9%. This metric measures the average cumulative annual growth rate over a specific period, in this case, 2025 to 2030 [1]. The segment of devices used for IPL treatments reached a value of 214.5 million USD in 2024 and is projected to grow at a CAGR of 15.9% through 2030 [2].

AIM

The study aimed to analyze the global market for laser and IPL devices used in aesthetic medicine and the structure of treatments performed using these devices. The analysis includes a detailed examination of market value in key geographic regions, identification of the most popular treatments, and growth forecasts through 2030.

METHODOLOGY AND DATA SOURCES

The analysis was based on a comprehensive dataset sourced from reputable research institutions and industry organisations that specialise in analysing medical markets and aesthetic technologies. The U.S.-based research and consulting firm Grand View Research (GVR) was the primary source for global aesthetic laser market size (device sales value) and detailed growth forecasts [1, 2]. The International Society of Aesthetic Plastic Surgery (ISAPS) was a source of statistical data on the number of procedures performed in individual countries and regions [3-5]. A global market research and reporting firm (BMI, Business Market Insights) provided detailed regional analyses, including data on the European laser hair removal market [6]. The analysis covers two types of data: device market value (in USD) and the number of procedures performed. The analysis covers the base period of 2018-2024, with detailed market growth forecasts through 2030.

The geographic coverage of the analysis focused on four major regions: North America (the United States and Canada), Europe (the United Kingdom, Germany, France, Italy, Spain), Asia-Pacific (China, Japan, India, South Korea, Australia), and South America (Brazil, Argentina, Colombia). The geographic scope of the analysis was limited to regions with data compatible with scientific publication standards. The eligibility criteria included:

- availability of data from research institutions with an established international reputation,
- the ability to cross-validate data from at least two independent sources,
- data segmentation specific to laser and IPL technologies,
- methodological consistency enabling cross-regional comparisons.

Emerging markets, including Poland, are characterized by fragmented data sources and a lack of standardized reporting methodologies for the aesthetic laser segment, which made it impossible to include them in this analysis while maintaining the required standards.

The regional analysis is characterized by varying availability of time-series data resulting from differences in the scope and frequency of publications by individual research institutions:

- North America: data from the American Society of Plastic Surgeons (ASPS), 2023-2024;
- Europe: volume data from ISAPS for 2018 and market forecasts from BMI, a global market research and analysis firm, for 2022–2030;
- Asia-Pacific: data from various regional sources, 2020-2024;
- South America: ISAPS data from 2020.

These differences reflect the specific methodologies of individual research institutions and the availability of segmented data for laser and IPL technologies in specific regions. All financial figures have been converted to USD using the average exchange rate from December 2024.

Data analysis methods

Market growth forecasts were based on the CAGR method, with cross-validation of data from at least two independent sources. All calculations were performed in Google Sheets, and visualizations were created in Google Data Studio and finalized in Canva Pro.

The analytical process was documented to ensure full reproducibility. All calculations were verified through independent control calculations, and the mathematical

formulas used in the forecasts are standard methods in the financial literature for growth forecasting.

Methodological limitations include temporal heterogeneity in regional data and fragmented reporting standards across sources. A conservative approach to forecasting minimizes the impact of these limitations on the reliability of the results. The main risk relates to CAGR assumptions based on historical trends, which was addressed through sensitivity analysis.

GLOBAL MARKET OVERVIEW

Market size and growth forecasts

The global market for aesthetic lasers and IPL devices exhibits some of the most impressive growth rates among segments of the aesthetic medicine market. According to market analyses, the market is estimated at $1.60 billion in 2024 and is forecast to grow to $3.83 billion by 2030, representing dynamic growth at a compound annual growth rate (CAGR) of 16.9% (2025-2030) [1]. Figure 1 illustrates the scale of this growth.

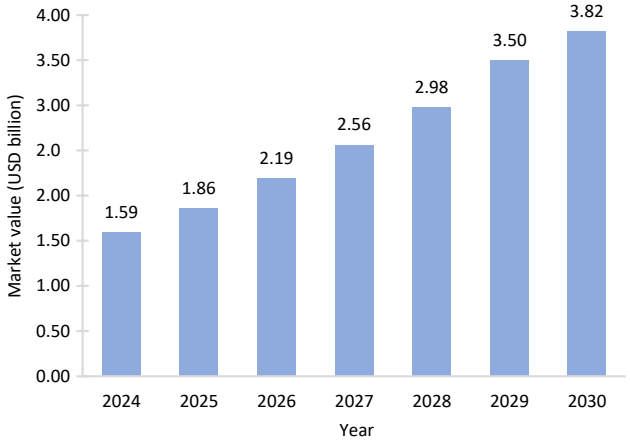


Fig. 1. Projected growth of the global market for lasers used in aesthetic procedures (2024–2030).
Source: Author's own work based on a baseline value of $1.60 billion (2024) and a CAGR of 16.9% according to [1].

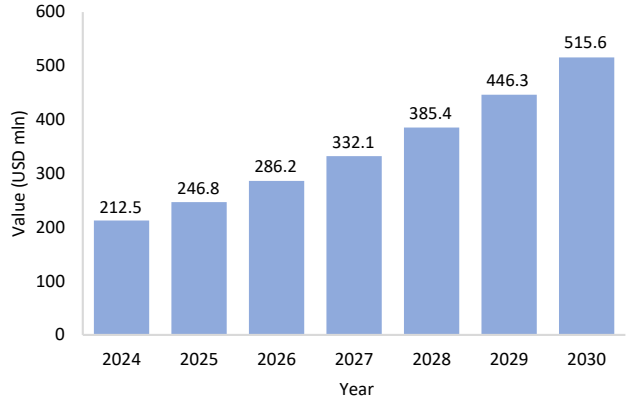


Fig. 2: IPL segment growth projections (2024–2030).
Source: Own work based on [2, 7].

IPL Segment

The IPL treatment segment, identified by Grand View Research as part of the broader aesthetic laser market, generated revenue of $214.5 million in 2024 and is projected to grow to $517.4 million by 2030 at a steady CAGR of 15.9% [2].

The IPL devices segment for home use is growing particularly fast, with the global market valued at $600 million in 2023 and projected to reach $1.2 billion by the end of 2032 at an 8% CAGR [7].

REGIONAL ANALYSIS

The global aesthetic laser market is characterized by significant geographic variation in terms of technological maturity, growth rates, and the structure of demand for specific types of treatments. A regional analysis reveals the dominance of developed markets alongside the rapidly growing importance of emerging economies, particularly in the Asia-Pacific region.

As shown in table 2 and figure 3, the United States remains the undisputed leader with a 38.5% share of the global market, while Europe is the second-largest market at 25%. The Asia-Pacific region, although it currently accounts for 20% of the global market value, shows the highest growth potential, making it a key area for future investments in the industry. Another notable feature is the significant variation in growth rates among individual countries, ranging from the highest CAGR of 22% in Canada, through stable growth of 16.9% in the U.S., to a moderate rate of 11.2% in Brazil.

The columns represent distinct, economically incomparable market segments. The first column shows revenue generated by professional IPL treatments performed in clinics and cosmetic salons (service revenue) [2]. The second column represents the market value of sales of physical IPL devices intended for home use (revenue from consumer equipment sales) [7]. Due to the different nature of these two segments (the services market vs. the consumer goods market), these

Tab. 1. Forecast for the development of two distinct segments of the IPL technology market: revenue from professional treatments and sales value of devices for home use (2024–2030).
Source: Author's own analysis based on [2, 7].

Year	Revenue from IPL treatments – professional segment (USD million)	Year-on-year growth (%)	Market value of IPL devices for home use (USD million)*
2024	214.5	–	650
2025	248.6	15.9%	702
2026	288.0	15.9%	758
2027	333.8	15.9%	819
2028	386.8	15.9%	884
2029	448.2	15.9%	955
2030	517.4	15.9%	1031

*Estimate based on a 2023 baseline value of USD 600 million and a CAGR of 8% [7].

values should not be added together or treated as parts of a single, combined IPL market.

The table reveals an important correlation: the areas with the highest current revenue concentration do not coincide with the regions with the greatest growth potential. Markets with the largest current share (the U.S. and Europe together accounting for 63.5% of global value) are growing more slowly than markets with a smaller share but higher growth rates (Canada - 22% CAGR with approximately a 5% global share). This suggests a "catch-up effect" typical of maturing industries: markets with lower service saturation are growing faster than already developed markets, which by 2030 may lead to a gradual equalization of regional market shares rather than the continuation of the U.S.'s current dominance. At the same time, variation in growth rates within emerging markets (22% in Canada versus 11.2% in Brazil) shows that they are not homogeneous - growth dynamics depend on local economic and regulatory factors, not solely on a country's stage of economic development. For manufacturers and investors, this means tailoring regional strategies rather than applying a one-size-fits-all approach across emerging markets.

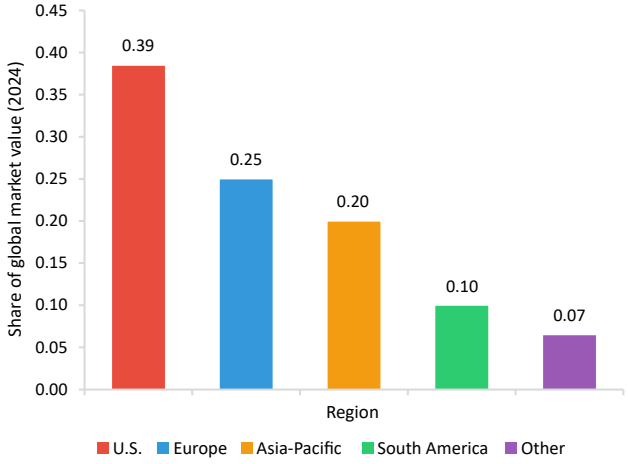


Fig. 3. Regional share of the global market for lasers used in aesthetic procedures.
Source: Author's own analysis based on [1, 3-5].

The remainder of this paper presents a detailed comparative analysis of four key global regions: North America, Europe, Asia-Pacific, and South America. The study covers data from 2018 to 2024, taking into account available data on laser and IPL procedures in the analyzed regions.

North America

The United States remains the undisputed leader in the global aesthetic laser market, accounting for 38.5% of its global value in 2024 [1]. It also ranks first in North America.

According to 2023 data, over 3.5 million skin resurfacing procedures were performed in the United States, a 5.0% increase from the previous year. Additionally, approximately

Tab. 2. Regional analysis of the aesthetic laser and IPL technology market-summary of market indicators and procedure data by country/region.
Source: Author's own work based on [1, 3, 5, 6, 8-16].

Region/Country	Global market share	CAGR (%)	Indicator type	Indicator value
United States	38.5%	16.9%	Number of procedures (2023)	3.5 million resurfacing procedures; 7.4 million Americans underwent cosmetic procedures (2022)
Canada	approx. 5%	22.0%	–	Highest growth rate in North America (2024–2029)
Europe	approx. 25%	13.9%*	Market value (laser hair removal)	USD 136.21 million (2022) → USD 386.56 million (2030) [6]
Europe (supplementary data)	–	–	Number of procedures (2018)	916,869 hair removal procedures (laser + IPL combined) [3]
United Kingdom	European leader	–	Demographic data	7.5 million people aged 18–25 (2022) – key target group
Germany	–	–	Number of procedures	496,785 non-surgical procedures (2018) – a broader category than laser/IPL alone
China	approx. 15%	–	Segment share	23.97% share of the global resurfacing segment (2024)
Japan	approx. 8%	–	Number of procedures (2020)	835.6 thousand non-invasive procedures
India	approx. 3%	Highest projected growth globally (2025-2030)	–	–
Brazil	approx. 7%	11.2%	Market value + number of procedures	USD 144.27 million (2022) → USD 337.68 million (2030); 1.929 million laser procedures (2020) [16]

* CAGR for Europe applies exclusively to the laser hair removal segment, not to the regional market as a whole.

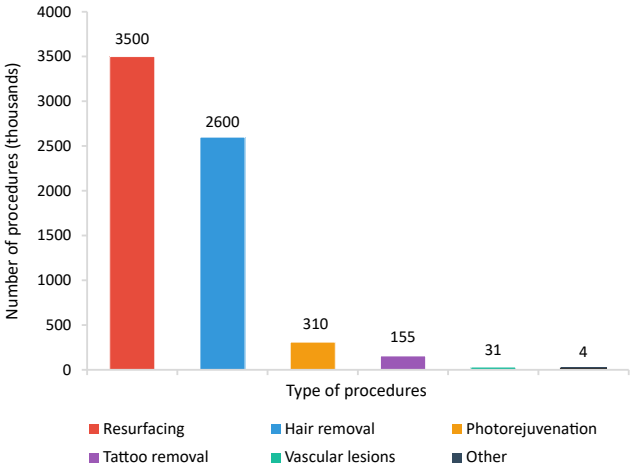


Fig. 4. Distribution of laser and IPL procedures performed in the United States. **Source:** Author's own analysis based on ASPS aggregate data [8] and ISAPS procedural data [3-5].

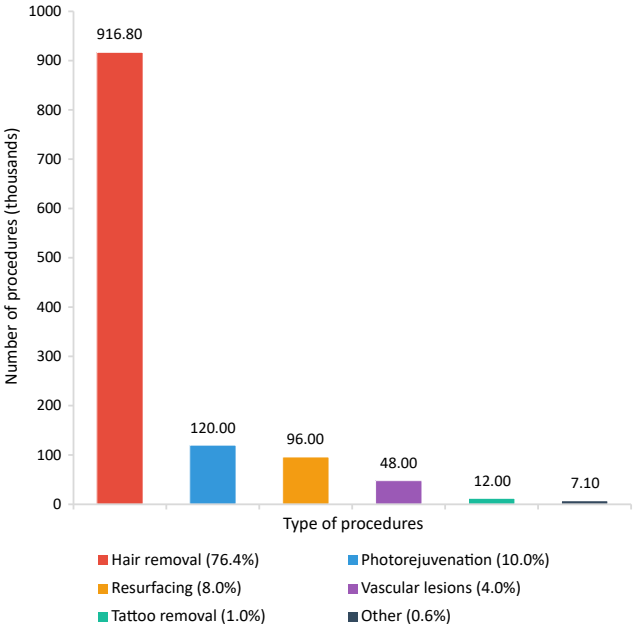


Fig. 5. Distribution of laser and IPL procedures performed in Europe.
Source: Author's own analysis based on [1, 3, 4, 6, 18].

3.1 million laser procedures were performed, including laser hair removal, tattoo removal, and other IPL treatments [8].

According to Statista, approximately 7.4 million Americans underwent professional cosmetic treatments in 2022 [9]. Apart from the professional treatment market, the segment of IPL devices intended for at-home use is also growing - following approval by the U.S. Food and Drug Administration (FDA), products such as Veet Infini'Silk Pro, Remington IPL6000 I-Light Pro, and Silk'n Flash&Go have increased the availability of and consumer confidence in this form of self-administered treatments outside of a beauty salon [17]. Figure 4 shows the distribution of laser and IPL treatments performed in the United States in 2023, totalling 6.6 million procedures.

The ASPS data includes the categories of "skin resurfacing" and "skin treatment," which collectively encompass lasers, IPL, and related procedures. Since the primary sources report procedures in aggregate categories that are incomplete in terms of a breakdown by technology (laser vs. IPL) and procedure type, the percentage breakdown presented here is the author's reinterpretation and disaggregation of this data, based on the proportions of procedures reported in detail in [3-5]. It should be treated as an approximate estimate rather than data provided directly by the cited institutions.

An analysis of the data presented in figure 4 shows that in 2023 in the U.S., among procedures classified collectively as skin resurfacing (a category including, among others, ablative and non-ablative lasers, as well as chemical peels and microdermabrasion) and as skin treatments (laser hair removal, IPL treatments, laser tattoo removal) [8], a total of 6.6 million procedures were performed. It should be noted that the original source (ASPS) reports these categories collectively, without a full breakdown between laser technology and IPL; therefore, the percentage breakdown presented below is an estimated reinterpretation by the author based on [3-5, 8] and should be treated as an approximation, not as direct source data.

Europe

The European market for procedures using lasers and IPL technology shows stable growth. The hair removal segment using this technology is projected to grow from $136.21 million in 2022 to $386.56 million by 2030, with a CAGR of 13.9% [6]. According to ISAPS data, a total of 916,869 laser and IPL hair removal procedures were performed in Europe in 2018 [3]. These figures do not distinguish between the two technologies, which limits the ability to assess their relative market share.

The United Kingdom remains the largest regional market by the number of aesthetic procedures performed [11], making it Europe's leading country in this segment.

Germany stands out as one of the leading countries in aesthetic medicine; according to ISAPS, 496,785 non-surgical procedures were performed there [3].

Figure 5 illustrates the distribution of laser and IPL procedures performed in Europe, totalling 1.2 million procedures. An analysis of the collected data revealed that the most popular laser/IPL procedure performed in Europe is laser/IPL hair removal: 916,800 procedures (76.4%), followed by photorejuvenation: 120,000 procedures (10.0%), skin resurfacing: 96,000 procedures (8.0%), removal of vascular lesions: 48,000 procedures (4.0%), tattoo removal: 12,000 procedures (1.0%), and others: 7,100 procedures (0.6%), i.e., other unclassified procedures.

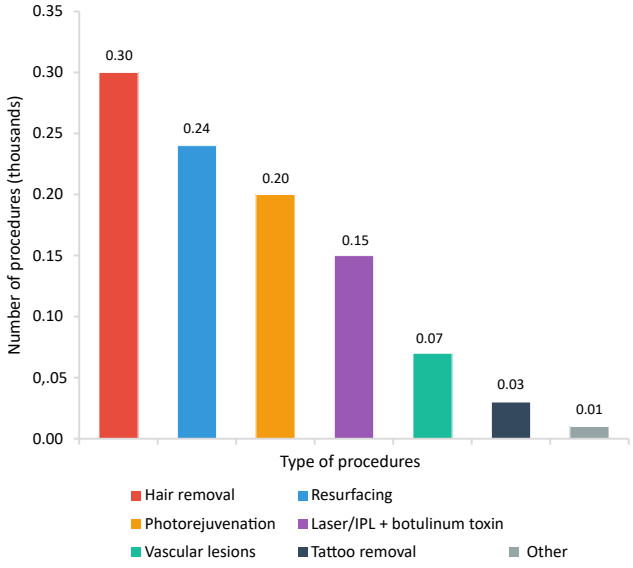
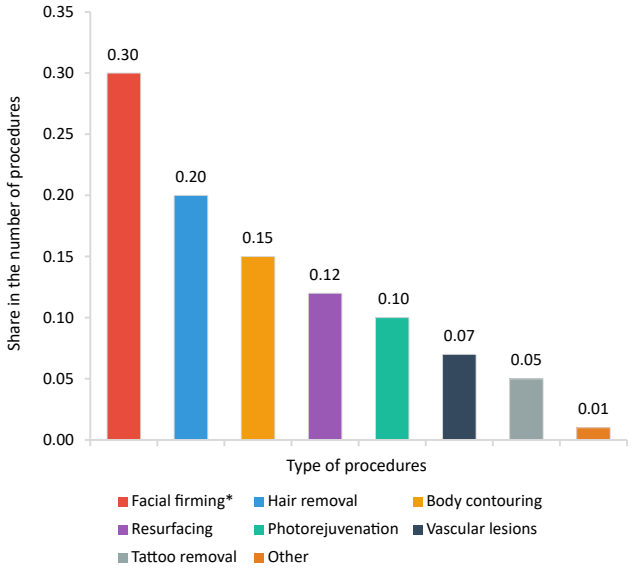


Fig. 6. Distribution of laser and IPL procedures performed in the Asia-Pacific region.
Source: Author's own analysis based on [4, 12, 13, 19].



* The facial tightening category may include, in addition to laser/IPL technologies, treatments using radiofrequency (RF) or high-intensity focused ultrasound (HIFU). Market sources often report this category collectively as "noninvasive tightening," without breaking it down by technology.

Fig. 7. Distribution of laser and IPL procedures performed in South America.
Source: Author's own analysis based on [4, 15, 16, 20, 21]. The total database of 1,929,359 procedures comes from ISAPS data for 2020 [4] and includes all aesthetic procedures (surgical and nonsurgical) performed by Brazilian plastic surgeons. The source does not specify what portion of this number corresponds exclusively to laser/IPL procedures. The percentage breakdown presented here is an author-developed estimation model based on proportions from sources [15, 16, 20, 21], rather than a direct reading of the source data.

Asia and the Pacific

The Chinese market for aesthetic laser treatments offers the greatest global growth potential. In China, laser skin resurfacing is the largest segment by revenue share, at 23.97% in 2024 [12]. In Japan, 835,600 procedures classified as noninvasive were performed in 2020. According to the source data, this category primarily includes hair removal and botulinum toxin injections and does not allow for a precise breakdown of the share of laser/IPL procedures alone [13]. The Indian market for laser-based aesthetic medical procedures is projected to have the highest global CAGR for 2025-2030 [14].

Figure 6 shows the estimated distribution of laser and IPL procedures in the Asia-Pacific region in 2024, totalling 1.5 million procedures.

An analysis of the data in Figure 6 places laser hair removal first: 450,000 procedures (30.0%), followed by skin resurfacing: 359,500 procedures (24.0%), and photorejuvenation: 300,000 procedures (20.0%). The category "laser/IPL + botulinum toxin" in the figure refers to hybrid procedures combining laser/IPL technologies with botulinum toxin injections: 225,000 procedures (15.0%). This is the only hybrid category included in the regional analysis-unlike in other regions, where the data sets include only treatments performed exclusively using laser or IPL technology. This means that part of the effect attributed to light-based technology in this segment may result from the simultaneous use of botulinum toxin, which must be taken into account when comparing the Asia-Pacific region's share with other parts of the world; this comparison is not fully methodologically symmetrical. Other procedures with smaller percentage shares include: removal of vascular lesions: 105,000 procedures (7.0%), tattoo removal: 45,000 procedures (3.0%), and other unclassified laser/IPL procedures: 15,500 procedures (1.0%).

South America

Brazil dominates the aesthetic laser market in South and Central America and remains the regional leader [15, 16]. Brazilian plastic surgeons performed 1,929,359 aesthetic procedures (surgical and nonsurgical) in 2020 [4]. The source does not specify what portion of this number corresponds to procedures using laser or IPL technology; ISAPS data are not disaggregated in this regard. Globally, in 2020, hair removal accounted for 12.8% of all nonsurgical procedures, ranking third after botulinum toxin (43.2%) and hyaluronic acid (28.1%) [4].

An analysis of the data based on figure 7 reveals the dominant laser/IPL procedures in the region in question: facial contouring: 578,800 procedures (30.0%), hair removal: 385,900 procedures (20.0%), and laser liposuction: 289,400 procedures (15.0%)-a minimally invasive procedure using a laser fiber inserted under the skin to liquefy adipose tissue before its removal. Less common procedures also included skin resurfacing: 231,500 procedures (12.0%), photorejuvenation: 193,900 procedures (10.1%), removal of vascular lesions: 135,600 procedures (7.0%), tattoo removal: 96,500 procedures (5.0%), and other procedures: 17,800 procedures (0.9%).

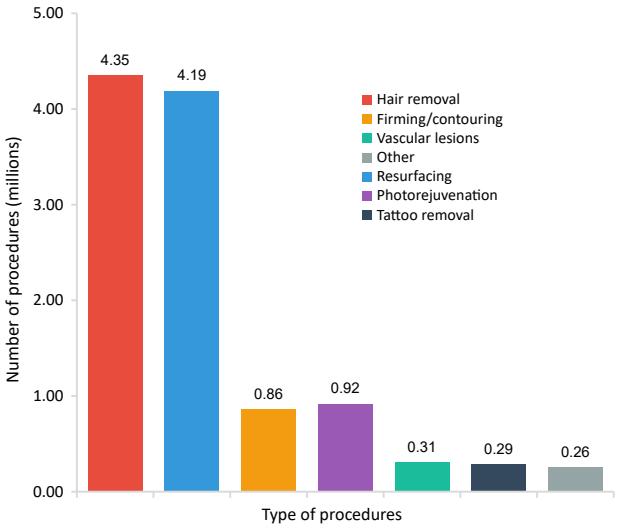


Fig. 8. Global ranking of laser and IPL treatments by number of procedures performed.
Source: Author's own analysis based on [1, 3, 4, 6, 12, 13, 18-21].

Global analysis

Figure 8 presents a global ranking of laser and IPL procedures based on the total number of procedures performed across all analyzed regions (the U.S., Europe, Asia-Pacific, and South America). It indicates a clear dominance of two main procedures:

- Laser hair removal: approximately 4.35 million procedures- the most common category globally, confirming the universal demand for this treatment across all analyzed regions.
- Skin resurfacing: approximately 4.19 million procedures- the second most popular category, second only to hair removal, with growth driven primarily by the U.S. market.

Together, these two procedures account for over 76% of all procedures (8.54 million out of 11.2 million), underscoring the dominance of these two segments.

Complementary treatments:

- Skin tightening and laser-assisted body contouring: approximately 0.87 million procedures - a category developing primarily in South America. It combines non-invasive skin tightening procedures with minimally invasive laser liposuction (using a subcutaneous fiber). This combination stems directly from the nature and limitations of the available source data.
- Photorejuvenation: approx. 0.92 million-procedures popular in all regions.
- Vascular lesions: approx. 0.32 million-a specialized segment.
- Tattoo removal: approx. 0.31 million-a niche segment, with the highest share in the U.S.
- Other: approx. 0.27 million – other unclassified procedures.

GROWTH FORECASTS THROUGH 2030

Forecasting methodology

Scenarios for the development of global revenue from procedures using aesthetic lasers and IPL technology through 2030:

- Pessimistic (20% probability): CAGR 12.5% – $2.89 billion (–24.5% compared to the base case scenario),
- base case (60% probability): CAGR 16.9% – 3.83 billion USD,
- optimistic (20% probability): CAGR 21.3% – $5.12 billion (+33.7% compared to the base-case scenario).
  95% confidence interval: $2.65–5.45 billion.

Global aesthetic lasers market – key forecasts

According to Grand View Research, the global market will grow from $1.60 billion (2024) to $3.83 billion (2030) at a CAGR of 16.9% [1]. Alternative forecasts from Precedence Research, a global market research and industry report provider, suggest the possibility of exceeding $6 billion, going beyond the scenarios adopted in the sensitivity analysis [14].

Detailed segment forecasts

Table 3 presents a detailed analysis of growth forecasts for the four key segments of the aesthetic lasers and IPL technology market for the 2024 – 2030-time horizon. The analysis includes baseline values, projected growth rates, and target projections, accounting for absolute growth for each segment.

Tab. 3. Segment forecasts for the aesthetic lasers and IPL devices market through 2030.
Source: Author's own analysis based on [2, 7].

Segment	Value in 2024 (USD million)	CAGR	Forecast by 2030 (USD million)	Growth
Laser hair removal	1088	18.8%	3595	+230%
Professional IPL segment	215	15.9%	520	+142%
At-home IPL devices	650*	8.0%	1028	+58%
Skin resurfacing	approx. 800**	17.7%	2200	+175%

* Estimate for 2024 based on a value of $600 million in 2023.
** Estimate based on global market share.

Segment analysis

- **Laser hair removal** is the largest market segment, reaching a base value of $1.088 billion in 2024. It is characterized by the highest compound annual growth rate (CAGR) of 18.8%, leading to a projected value of $3,595 million in 2030. An absolute growth of +230% makes this segment the fastest-

growing area of the entire market, confirming the universal nature of hair removal treatments across all geographic regions.

- **The professional IPL segment** represents the second-largest segment, with a value of $215 million in 2024 and a moderate growth rate of 15.9% CAGR. The projected value of $520 million in 2030 represents a 142% increase, reflecting the steady adoption of IPL technology in professional aesthetic clinics and European preferences for safer light-based technologies.
- **The home** IPL **device segment** exhibits the lowest growth rate (an 8.0% CAGR), yet it holds significant potential for democratizing this technology. The segment's value is projected to grow from $650 million to $1,028 million (+58%) [7], reflecting growing consumer preference for the privacy and convenience of at-home treatments, particularly following the COVID-19 pandemic.
- **Skin resurfacing** shows a high growth rate of 17.7% CAGR, leading to a projected value of $2,200 million in 2030 (a 175% increase). This segment is driven by ageing populations in developed countries and growing awareness of anti-ageing prevention among younger demographic groups, particularly influenced by social media.

Regional growth forecasts

Table 4 presents a comprehensive analysis of regional growth forecasts for the aesthetic laser market (and, for the Asia-Pacific region, the broader market for non-invasive procedures) through 2030, covering six key countries and geographic regions. The analysis accounts for diverse market segments, base periods, and varying growth rates that reflect local economic and cultural conditions.

Regional analysis

- **Canada** exhibits the most dynamic growth globally, with a CAGR of 22.0%, making it the leader in growth across the entire aesthetic laser industry. This momentum stems from high disposable income, widespread consumer awareness, and strong awareness of advances in aesthetic procedures. Canada is a mature market with the highest growth potential in North America.
- **The United States** maintains its position as the undisputed global leader, with a 38.5% share of the global market and a steady growth rate of 16.9% CAGR. The projected value of approximately $1,570 million in 2030 confirms U.S. dominance, driven by high disposable income, advanced medical infrastructure, and cultural acceptance of aesthetic procedures across all demographic groups.
- **Europe** is characterized by moderate but stable growth at a 13.9% CAGR in the laser hair removal segment (measured as the market for laser devices: alexandrite, diode, and Nd:YAG), with projected growth from $136.21 million in 2022 to $387 million in 2030 [6]. This growth reflects European preferences for treatments with proven efficacy and rigorous safety standards, in compliance with EU regulations. Hybrid devices that combine different types of lasers (e.g., simultaneous emission of alexandrite and Nd:YAG laser light) are increasingly popular. However, the source data does not separately include devices that use only IPL technology.
- **Brazil** dominates the South American region, with the entire market projected to grow from $144.27 million to $338 million at a CAGR of 11.2%. This growth is driven by the region's strong aesthetic culture, the influence of social media, and a growing middle class, although the growth rate remains moderate compared to developed regions.
- **Asia-Pacific** represents the greatest potential for volume growth, with a forecast of reaching $51,587 million by 2030 at a CAGR of 17.2% for the non-invasive procedures segment (the entire market for non-invasive procedures, not just laser treatments). This figure reflects the massive scale of Asian markets and the growing interest in aesthetic procedures in countries such as China, Japan, and South Korea.
- **India** holds a unique position with the highest projected CAGR globally for the 2025-2030 period, driven by a demographic boom, a rapidly growing middle class, and a cultural shift toward acceptance of aesthetic procedures.

Tab. 4. Regional growth forecasts through 2030. Source: Author's own work based on [1, 6, 10, 16, 22–24].

Region/country	Segment	Base value	Base year	CAGR	Forecast to 2030
Canada	The whole market	-	2024	22.0%	-
U.S.	The whole market	38.5% global share	2024	16.9%	approximately USD 1,570 million
Europe	Laser hair removal	$136.21 million	2022	13.9%	USD 387 million
Brazil	The whole market	$144.27 million	2022	11.2%	USD 338 million
Asia Pacific*	Non-invasive treatments	-	2024	17.2%	51587 million USD
Indie	The whole market	-	2025	Highest globally	-

*The Asia-Pacific figure is for the entire non-invasive procedures market [23] and is not comparable to the other rows in the table.

The Indian market represents the greatest untapped potential globally.

DISCUSSION

The presented analysis of the global market for aesthetic lasers and IPL technologies, valued at $1.6-2.38 billion (2024) and projected to grow to $4.08-5.82 billion (2030),

is strongly supported by a growing body of scientific evidence confirming the efficacy and safety of these technologies. The market's dynamic growth (CAGR of 16.9%) is directly correlated with advances in clinical research, which consistently demonstrate the long-term efficacy of laser treatments [22].

The dominance of laser hair removal (4.35 million procedures globally, 38.8% of the market) is reflected in a solid scientific foundation. The results of a meta-analysis of 13 randomized controlled trials (n = 652) confirm that the diode laser (accounting for 38.9% of the hair removal market) provides a significantly greater reduction in hair count at the 3- and 6-month follow-ups [25]. Systematic reviews confirm long-term hair reduction ranging from 30% to 84.25%, depending on the laser type and anatomical location [26]. Similarly, observations from 2016-2019 (n = 217), which systematically evaluated the efficacy of the diode laser (805 nm) for the first time in a multiethnic population, confirmed objective efficacy of 86-90% without serious adverse events [27-29]. These results directly support the projected 18.8% CAGR growth for the laser hair removal segment through 2030.

The observed regional differences in treatment preferences reflect not only cultural factors but also the availability of scientific evidence and regulatory standards.

- **Hair removal** is the most commonly performed procedure using laser and IPL technologies in Europe (76.4% of procedures in this category), reflecting the well-established position of these methods in the region. It should be noted that the available source data [3] does not distinguish between the share of laser and IPL in this figure, and current market trends indicate a growing, rather than declining, advantage of pure laser technology over IPL-the global laser hair removal market is currently growing at a CAGR of 18.3% [22], significantly faster than the European market for IPL services (5.9% CAGR) [30].
- **The dominance of resurfacing in the U.S.** (53% of treatments, 3.5 million procedures annually) is supported by advanced histopathological studies confirming the mechanism of action of fractional ablative lasers through the creation of thermal microdamage and increased collagen production. The 2025 consensus statement reaffirmed this with recommendations for skin resurfacing [31]. This position directly supports U.S. investments in anti-ageing technologies driven by the baby boomer demographic.
- **Asian trends** toward combination therapies are reflected in regional preferences for hybrid procedures combining laser technologies with botulinum toxin (15% of procedures in the Asia-Pacific region, according to the analysis). In clinical practice, this combination most often utilizes non-ablative lasers (fractional, e.g., thulium or erbium-glass); data from large clinical trials indicate that this combination accounts for the vast majority of combined treatments.

The projected growth of the home-use device segment from $600 million to $1.2 billion (CAGR of 8%) is supported by a systematic review of 37 studies involving 1,871 patients, which confirmed the effectiveness of IPL devices for home use [32]. Although this segment's growth rate is the lowest among those analyzed, scientific evidence confirms the safety of at-home applications, which supports trends toward the democratization of aesthetic technologies.

The difference in growth rates between the professional segment (15.9-18.8% CAGR) and the at-home segment (8% CAGR) also reflects differences in efficacy confirmed by clinical trials. While professional systems achieve hair reduction of 30–84%, at-home devices demonstrate moderate efficacy with a significantly higher safety profile [33].

An analysis of clinical trial safety profiles provides important information that complements market trends. For the alexandrite laser, transient hyperpigmentation was reported in 10% of patients, burns in 1%, and hypopigmentation in 2% [34]. Multiethnic studies on the 805-nm diode laser did not reveal any serious adverse events in the analyzed groups [27-29]. The above data pertain to two specific types of laser devices and should not be generalized to the entire category of laser technologies, whose safety profiles vary depending on wavelength, power, and mechanism of action.

This positive safety profile directly supports market growth forecasts, particularly in contexts where awareness of treatment safety is crucial for the adoption of the technology by populations with different skin phototypes.

Although the market analysis is based on reputable industry sources, it has methodological limitations due to the diversity of base periods (2018-2024) and regional data collection methods. In particular, European data from 2018 may not reflect current technological trends, which requires careful interpretation of the forecasts.

Recommended Areas for Future Research

1. Standardization of global data collection methodologies with uniform reference periods.
2. Long-term cohort studies in Asian populations, extending existing findings on diode laser safety in multiethnic groups [27-29] to other ethnic groups.
3. A cost-effectiveness analysis comparing professional systems with home-use devices.
4. An assessment of the safety profile of procedures in patients with high skin phototypes (Fitzpatrick V and VI),

with particular emphasis on the rapidly growing African markets.

Additionally, the geographic scope of the analysis was limited to regions with established market data reporting systems. Future studies should include emerging European markets, including Poland, the Czech Republic, and Hungary, once standardized data segmentation methodologies for laser and IPL technologies have been developed in these regions.

The convergence of scientific evidence with market trends provides valuable guidance for shaping health policy and clinical practice standards. Canada's 22% CAGR can serve as a model for other countries developing regulations for aesthetic technologies, combining innovation with patient safety.

The global dominance of laser hair removal (38.8% of the market), with proven long-term efficacy ranging from 30% to 84% [33], suggests the need to incorporate this technology into standard dermatological protocols, particularly in the context of growing multiethnic populations requiring access to safe and effective hair removal methods.

The projected market value growth to $4-6 billion by 2030, combined with a growing body of scientific evidence, signals the need to develop international certification standards for laser technologies and educational programs for practitioners to ensure safe implementation on a global scale.

CONCLUSIONS AND RECOMMENDATIONS FOR THE AESTHETIC INDUSTRY

Key findings from the analysis

Market growth dynamics

- The global aesthetic laser market is in a phase of dynamic growth, with projected growth from $1.6 billion in 2024 to $3.83 billion in 2030. This represents an impressive compound annual growth rate of 16.9%. The IPL technology segment is growing more slowly but steadily, with a projected annual growth rate of 15.9%, translating to $517 million in 2030.
- Particularly dynamic growth is observed in the laser hair removal segment, which is characterized by the highest projected growth rate of 18.8% annually. By comparison, the home-use IPL devices segment is growing more slowly, at 8.0% annually. It should be emphasized that these are two distinct technologies (professional medical lasers versus consumer IPL devices), not the same technology offered through two different distribution channels. Despite its slower growth, this segment represents a significant trend toward the democratization of light-based technologies in aesthetics, enabling patients to perform treatments in the privacy of their own homes.

Regional differences

- The United States maintains its position as the undisputed global leader, with a 38.5% share of the global aesthetic laser market. The U.S. market is characterized by a strong preference for anti-aging treatments, particularly skin resurfacing, which accounts for 53% of all laser procedures performed there. This dominance stems from American consumers' high disposable income and the strong influence of social media on beauty standards.
- Europe is the second-largest market, with a 25% global share. The European market is characterized by a clear preference for IPL technology and hair removal treatments, which account for 76.4% of all procedures performed. This trend reflects European preferences for technologies with a proven safety profile and a pragmatic approach to aesthetic treatments.
- The Asia-Pacific region, although it currently accounts for 20% of global value, shows the highest growth potential in the coming years. It is characterized by growing aesthetic awareness among the population and the increasing purchasing power of the middle class. The Chinese market is particularly interesting, where skin resurfacing is the largest segment, accounting for 23.97% of revenue.
- Canada stands out as the region with the most dynamic growth globally, with a projected annual growth rate of 22%. This exceptional growth stems from high disposable income, widespread consumer awareness, and strong acceptance of advances in aesthetic procedures.

Treatment structure

- An analysis of the global treatment structure reveals the clear dominance of two procedure categories. Laser hair removal and IPL account for 38.8% of all procedures performed, or 4.35 million procedures annually. Skin resurfacing ranks second with a 37.4% share and 4.19 million procedures. Together, these two categories account for over 76% of the entire global laser treatment market, indicating a clear concentration of demand.
- Other treatment categories have a significantly smaller market share. Photorejuvenation accounts for approximately 8.2% of the market, while treatments targeting vascular lesions represent 2.9%. Tattoo removal, despite its growing popularity, remains a niche segment with a 2.8% share of the global market.
- Significant regional differences in treatment preferences reflect local beauty standards and cultural factors. While Americans prefer anti-ageing treatments, Europeans focus on hair removal, and Asian markets show growing interest in hybrid procedures combining laser technologies with botulinum toxin.

Recommendations

Recommendations for Device Manufacturers

Laser device manufacturers should focus their research and development investments on hair removal technologies, particularly those tailored to the ethnic diversity of the global population. A key development area should be systems that are safe for Fitzpatrick skin types V and VI, which are currently underrepresented in clinical trials.

- The development of hybrid systems combining laser and IPL technologies can ensure maximum versatility of applications, allowing treatment protocols to be tailored to individual client needs. Investments in technologies that minimize the risk of adverse effects will be crucial for expansion into markets with diverse populations.
- The segment of IPL devices for home use requires the development of user-friendly technologies with automatic safety protocols. These devices should feature intuitive operation and built-in skin type recognition systems that minimize the risk of improper use.

Recommendations for Clinic and Practice Owners

- Owners of aesthetic clinics should treat laser hair removal as the cornerstone of their treatment offerings due to its projected high growth rate and the universal nature of demand. Investing in modern hair removal systems should be a strategic priority, with particular emphasis on equipment that allows safe treatment across various skin phototypes.
- The treatment portfolio should be expanded to include skin resurfacing, particularly for clients over the age of 35. This segment is particularly profitable in the U.S. market and can be a significant revenue source for clinics serving high-income clients.
- Hybrid treatments are an emerging trend that is gaining popularity, particularly in Asian markets. Clinics planning to expand should consider incorporating such procedures into their offerings.

Recommendations for Educational Institutions

- Educational institutions play a key role in preparing qualified personnel for the rapidly growing aesthetic laser industry. A priority should be the development of specialized training programs addressing ethnic diversity, taking into account the specific requirements of treatments for different skin phototypes.
- Safety protocols for Fitzpatrick skin types V and VI should be a mandatory component of all training programs. Inadequate preparation in this area can lead to serious complications and hinder expansion into markets with diverse populations.

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